

REMARKS

A. Background

Claims 1-15 were pending in the application at the time of the Office Action. Claims 1-12, 14, and 15 were rejected as being anticipated by and/or obvious over cited art. Claim 13 was objected to as being dependent upon a rejected base claim. By this response applicant has cancelled claim 2; amended claims 1, 3, 6-8, and 10; and added new claims 16-32. As such, claims 1 and 3-32 are presented for the Examiner's consideration in light of the following remarks.

B. Proposed Amendments

Applicant has herein amended claims 1, 3, 6-8, and 10 to further clarify, more clearly define, and/or broaden the claimed inventions to expedite receiving a notice of allowance. For example, claim 1 has been amended to clarify that the resupply raw material is "liquefied on a surface of a reflection plate placed above the crucible..., held on the surface of the reflection plate for a certain time for a soaking treatment, and supplied into the crucible from the reflection plate, and the temperature in the higher temperature area is a soaking temperature which is 20 to 100 °C higher than the crystallization temperature;" claim 6 has been amended to clarify that the reflection plate liquefies the resupply raw material "by heating the resupply raw material to the same temperature as a soaking temperature which 20 to 100 °C higher than a crystallization temperature, [and] holds the resupply raw material on the surface of the reflection plate for a certain time for a soaking treatment;" and claim 3 has been rewritten in independent format to incorporate most of the limitations of amended claim 1 from which claim 3 previously depended.

Applicant has also added new claims 16-32, directed to various embodiments of the invention, which claims Applicant submits are distinguished over the cited art. New independent claim 26 is

respectively old claim 13 rewritten in independent form to incorporate all the limitations of claim 6, from which prior claim 13 previously depended.

The amendments to the claims are supported throughout the specification and the embodiments described therein. In view of the foregoing discussion, applicant submits that the amendments to the claims do not introduce new matter and entry thereof is respectfully requested.

C. Rejections Based on 35 USC § 102

Paragraphs 2 and 3 of the Office Action reject claims 1, 3, and 6 under 35 USC § 102(b) as being anticipated by Japanese Patent No. JP61-236681 to Koichi (“*Koichi*”). Applicant respectfully traverses this rejection and submits that *Koichi* does not anticipate claims 1, 3, and 6 because *Koichi* does not include each and every claim limitation recited in the rejected claims.

Koichi is directed to a device that produces crystals by continuously feeding a solid raw material into a crucible. As shown in Figure 2, the solid raw material is passed over a series of horn-shaped material passing tools 11 and 12 positioned at the top end of the crucible before falling into a melted liquid 4. The material passing tools 11 and 12 are continuously rotated by rotating shaft 14, and the solid raw material enters the crucible 2 along the outer wall of the crucible. *Koichi* discloses that the raw material remains solid and does not melt until the material has passed completely over all of the material passing tools 11 and 12 and has dropped onto the melted liquid 4. See p. 8 of the English translation of *Koichi*. Applicant notes that *Koichi* does not include any type of reflection plate or disclose any type of soaking or overheating treatment.

Because *Koichi* does not include any type of reflection plate or disclose any type of soaking or overheating treatment, applicant respectfully submits that *Koichi* does not disclose or suggest a method in which a resupply raw material is “liquefied on a surface of a reflection plate placed above

the crucible by heating at the same temperature as in the higher temperature area, held on the surface of the reflection plate for a certain time for a soaking treatment” (claim 1) or “for an overheating treatment” (claim 3), “and supplied into the crucible from the reflection plate, and the temperature in the higher temperature area is a soaking temperature” (claim 1) or “is an overheating treatment temperature” (claim 3), “which is 20 to 100 °C higher than the crystallization temperature,” as recited in amended claims 1 and 3; or an apparatus that includes “a reflection plate placed above the crucible, which liquefies the resupply raw material supplied from the raw material supply apparatus by heating the resupply raw material to the same temperature as a soaking temperature which is 20 to 100 °C higher than a crystallization temperature, holds the resupply raw material on the surface of the reflection plate for a certain time for a soaking treatment, and drops the resupply raw material as a liquid into the crucible,” as recited in amended claim 6.

D. Rejections Based on 35 USC § 103

Paragraphs 4-7 of the Office Action reject claims 2, 3-12 and 14-15 under 35 USC § 103(a) as being obvious over *Koichi* in view of PCT Publication WO1999/63132 (“*Nagai*”). Inasmuch as claim 2 has been canceled herein, the rejection of that claim has been rendered moot. Regarding the rest of the rejected claims, Applicant respectfully traverses this rejection.

Like *Koichi*, *Nagai* is also directed to a device that produces crystals by continuously feeding a solid raw material into a crucible. *Nagai* uses a pull-down method, in which the raw powder material 5p is supplied onto a pre-melting plate 3 where the material is melted and then introduced into a crucible 2. See Abstract.

Applicant submits that *Nagai* does not cure the deficiencies of *Koichi*, discussed above. While *Nagai* discloses a pre-melting plate 3, applicant submits that this pre-melting plate does not

correspond to the “reflection plate” recited in amended claims 1, 3, and 6. In *Nagai*, the powder material is placed on the pre-melting plate simply to melt the powder before introducing the melted material into the crucible 2. Applicant notes that *Nagai* fails to disclose any sort of soaking or overheating treatment being performed using the pre-melting plate 3. *Nagai* also fails to disclose a soaking temperature of 20 to 100 °C higher than the crystallization temperature.

In light of the above, Applicant submits that a prima facie case of obviousness has not been established regarding claims 3 and 6 because the allegedly obvious combination fails to include all of the limitations of the rejected claims. Accordingly, Applicant respectfully requests that the obviousness rejection with respect to claims 3 and 6 be withdrawn.

Claims 4, 5, 7-12 and 14-15 depend from claims 1 and 6 and thus incorporate the limitations thereof. As such, applicant submits that claims 4, 5, 7-12 and 14-15 are distinguished over the cited art for at least the same reasons as discussed above with regard to claims 1 and 6. Accordingly, Applicant respectfully requests that the obviousness rejection with respect to claims 4, 5, 7-12 and 14-15 also be withdrawn.

No other objections or rejections are set forth in the Office Action.

E. Allowable Subject Matter

Paragraph 7 of the Office Action objects to claim 13 as being dependent upon a rejected base claim, but states that this claim would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. As noted above, new claim 26 is the combination of prior claims 6 and 13. As such, Applicant submits that new claim 26 is allowable for at least the same reasons that claim 13 was considered allowable in the Office Action.

Applicant submits the following comments concerning the Examiner's statements of reasons for the indication of allowable subject matter set forth in the Office Action. In general, Applicant agrees with the Office Action that the invention to which prior claim 13 (now new claim 26) is directed is patentable over the cited references, but respectfully disagrees with the statement of reasons for allowance as set forth in the Office Action.

Particularly, Applicant submits that it is improper to characterize a single limitation, or subset of limitations, as constituting the basis for allowance of a claim. Rather, the patentability of a claim is properly determined with reference to the claim *as a whole*. Accordingly, Applicant does not concede that the reasons for allowable subject matter given by the Office Action are the only reasons that make, or would make, the claims allowable and Applicant does not make any admission or concession concerning the statements in the Office Action concerning the allowability of new claim 26 in view of the cited references.

F. New Claims 16-25 and 27-32

Applicant submits that new claims 16-25 and 27-32 are also distinguished over the cited art of record. For example, new independent claim 16 recites “a reflection plate placed above the crucible, which liquefies the resupply raw material supplied from the raw material supply apparatus by heating the resupply raw material to the same temperature as an overheating treatment temperature which is 20 to 100 °C higher than a crystallization temperature, holds the resupply raw material on the surface of the reflection plate for a certain time for an overheating treatment, and drops the resupply raw material as a liquid into the crucible.” Applicant submits that none of the cited art, individually or combined, teach or suggest these limitations.

New claims 17-25 and 27-32 depend from claims 1, 3, 6, and 16 and thus incorporate the limitations thereof. As such, new claims 17-25 and 27-32 are distinguished over the cited art for at least the same reasons given above regarding claims 1, 3, 6, and 16.

G. Conclusion

Applicant notes that this response does not discuss every reason why the claims of the present application are distinguished over the cited art. Most notably, applicant submits that many if not all of the dependent claims are independently distinguishable over the cited art. Applicant has merely submitted those arguments which it considers sufficient to clearly distinguish the claims over the cited art.

In view of the foregoing, applicant respectfully requests the Examiner's reconsideration and allowance of claims 1 and 3-32 as amended and presented herein.

The Commissioner is hereby authorized to charge payment of any of the following fees that may be applicable to this communication, or credit any overpayment, to Deposit Account No. 23-3178: (1) any filing fees required under 37 CFR § 1.16; (2) any patent application and reexamination processing fees under 37 CFR § 1.17; and/or (3) any post issuance fees under 37 CFR § 1.20. In addition, if any additional extension of time is required, which has not otherwise been requested, please consider this a petition therefor and charge any additional fees that may be required to Deposit Account No. 23-3178.

In the event there remains any impediment to allowance of the claims which could be clarified in a telephonic interview, the Examiner is respectfully requested to initiate such an interview with the undersigned.

Dated this 20th day of January 2009.

Respectfully submitted,

/Scott A. Woodbury/ Reg. #55743

SCOTT A. WOODBURY

Registration 55,743

DANA L. TANGREN

Registration No. 37,246

Attorneys for Applicant

Customer No. 022913

Telephone No. 801.533.9800

SAW:cad

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